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Canadian Department of Communications Regulatory Statement

This digital apparatus does not exceed Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radio-électriques dépassant les limites applicables aux appareils numériques de la classe B prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

FCC Class B Radio Frequency Interference Statement

Note:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient or relocate the receiving antenna.

2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio/television technician for help.

Notice 1:

The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Notice 2:

Shielded interface cables must be used in order to comply with the emission limits.

Notice 3:

This product complies with the requirements set out in the Council Directive on the Approximation of the Laws of the Member States relating Electromagnetic Compatibility (89/336/EEC). For the evaluation regarding the electromagnetic compatibility, the following standards were applied:

EN50082-1, IEC 801-2, IEC 801-3, IEC 801-4

EN50081-1, EN55022

D.N.S.FI. Regulatory Statement

Class 1 laser product

(EN 60825: 1991)

or

Luokan 1 laserlaite

Klass 1 laser apparat

(EN 60825: 1991)

Additional remarks:

VAROITUS - Laitteen käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyttäjän turyallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

Varning - Om apparaten används på annat sätt än i denna bruksanvisning specificerats, kan användaren utsättas för osynlig laserstrålning, som överskrider gränsen för laserklass 1.


According to EN 60825 sub-clause 6, regarding actions to be taken against dangerous radiation including copies of all warning labels and information about the laser components and radiation data such as wavelength, output power and pulse times.

Safety instructions

1. Follow all warnings and instructions marked on the product.
2. **DANGER:** Invisible laser radiation when open. Avoid direct exposure to beam.
3. Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
4. Openings in the front panel and the back or bottom are provided for ventilation. To protect it from overheating, these openings must not be blocked or covered. This product should never be placed near or over a radiator or heat register, or in a built-in installation unless proper ventilation is provided.
5. This product should be operated from the type of power indicated on the marking label. If you are not sure of the type of power available, consult your dealer or local Power Company.
6. Never push objects of any kind into this product through cabinet slots as they may touch dangerous voltage points or short cut parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.

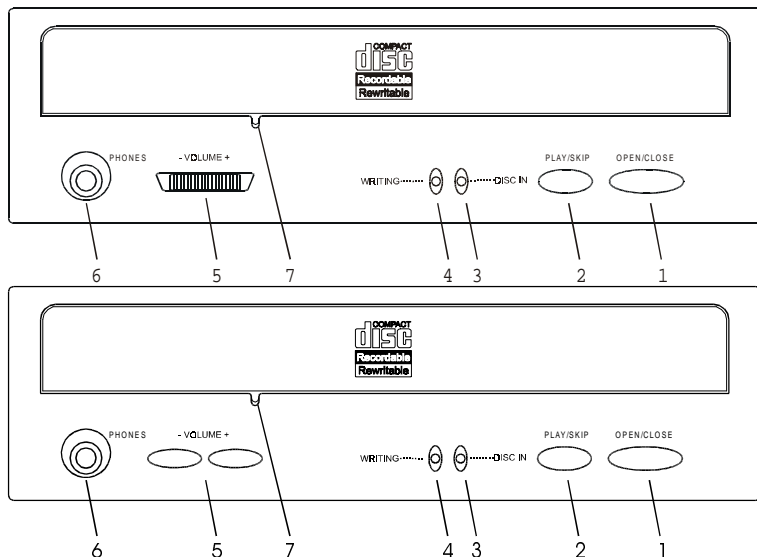
Recommended System Configurations

The system requirements listed below are recommended for ensuring consistent writing performance.

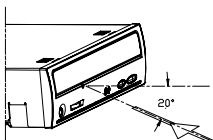
- Operating system: Windows® 95/98 or Windows NT® 4.0
 **NOTE: For Windows NT, Service Pack 3 is required.**
- RAM: 16 MB or larger.
- CPU: Pentium 133 or above
- Hard disc drive: Minimum 17 MB of free space, 42 MB recommended.
10 MB free hard drive space for each minute of music to be recorded.
- An available space on IDE controller (ATA-2 or EIDE).

Product Description

Front View



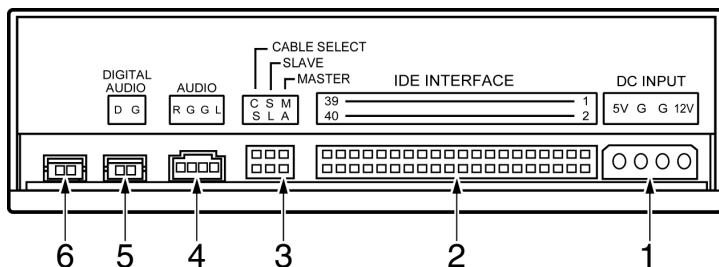
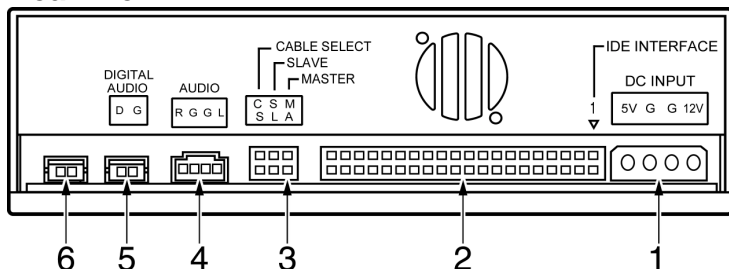
1. *Open/Close button:* Open and close for disc loading and removal.
2. *Play/Skip button:* Play audio CD and skips one track forward if press again..
3. *Disc In indicator:* Lights up while data is being read from the disc; flashes during seek operation. Please refer to the chart below for detailed status description.
4. *Writing indicator* lights up while data is being written to or erased from the disc. Please refer to the chart below for detailed status description.
5. *Volume buttons:* Adjusts headphone volume level.
6. *Headphones jack:* Attach headphones or self-amplified speakers.
7. *Emergency eject hole:* Insert a straightened paper clip to manually eject the tray.



Indicators status

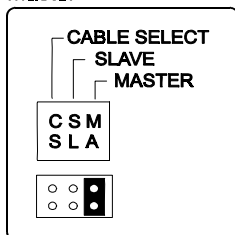
INDICATORS		STATUS DESCRIPTION
WRITING	DISC IN	
Off	Off	Drive ready and No disc loaded.
Off	Blinking Green	Power on or Reading.
Off	Steady Green	Disc loaded and Ready to be accessed.
Blinking Red	Blinking Green	Test before writing.
Steady Red	Blinking Green	Writing.

Rear View

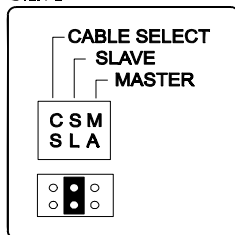


1. *Power supply connector:* Connect the CD-RW drive to the computer's power supply.
2. *Interface connector* connects the CD-RW drive to the 40-pin IDE interface cable.
3. *Device configuration jumper* is installed on "SL" for slave mode by default. The CD-RW drive can be configured as a master drive if the jumper is installed on "MA". The figure below illustrates the jumper settings.

Master



Slave



4. *Audio line out connector* has two channels, left and right audio outputs.
5. *Digital Audio Output* offers high quality audio effect by outputting digital signal to D/A converter.

6. *Testing jumper* is reserved for manufacturer internal testing purposes.

Installation

Hardware Installation

Before you start...

Power off your computer and all peripheral devices. Unplug the computer's power cord from wall outlet or from the power strip.

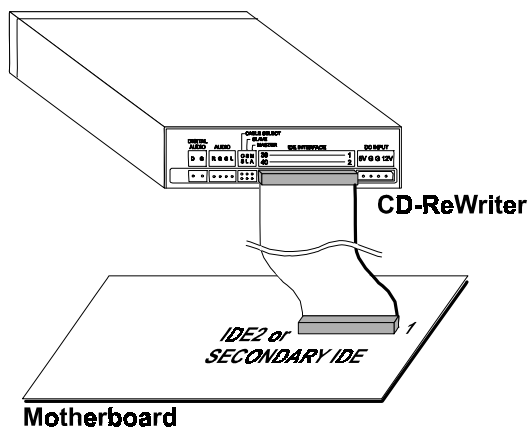
Required tools

- 1 A medium-size Philips screwdriver
- 2 Your computer system or motherboard manual (to locate your computer system's IDE controller).

Installation procedure

CAUTION: *The discharge of static electricity can damage electronic circuitry. You can avoid static discharge by touching a grounded metal object, like your computer case, before and during installation of hardware inside your computer.*

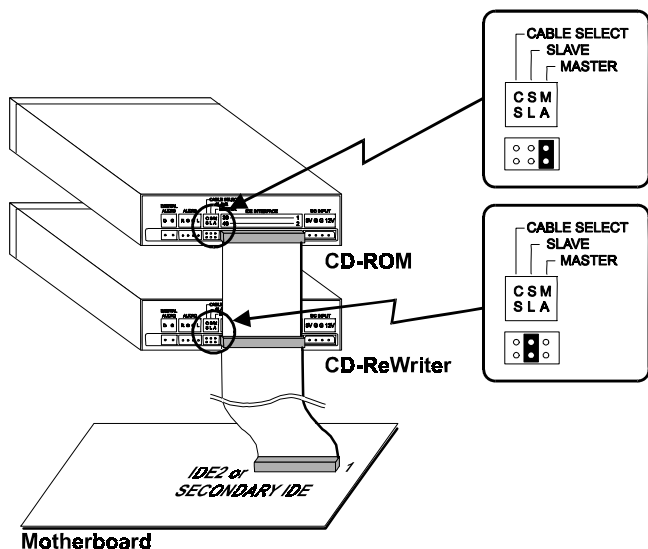
1. Remove the housing or casing of your computer. Be careful of any sharp edges, which might be hidden inside your computer.
2. **If there is not any other CD-ROM drive installed in your system.** We recommend installing the CD-ReWriter in the Secondary IDE port. It is unnecessary to adjust any other jumpers on the CD-ReWriter. Proceed to step 4 for further installation.



3. If a CD-ROM drive is already installed in your system.

☞ **Note:** We recommend that you install the CD-ROM on the Secondary IDE channel as the master device (MA), and the CD-ReWriter on the Secondary IDE channel as the slave device (SL). You may follow the steps below to fulfill this arrangement.

- 3.1 Firstly, make sure that your Secondary IDE cable has two ports available for two IDE devices. If not, ask your main board vendor or purchase one from computer hardware stores.
- 3.2 If the CD-ROM drive was installed in the Primary IDE channel, disconnect it from the Primary IDE cable.
- 3.3 Adjust the Device Configuration Jumper of the CD-ROM drive to master (MA) position.
- 3.4 Adjust the Device Configuration Jumper of the CD-ReWriter to Slave (SA) position.



4. From your main board, find the 4-pin drive power cable and the 40-pin Secondary IDE interface cable. Then connect them to your CD-ReWriter. Please do notice that the color edge of the IDE cable shall be aligned with PIN 1 of the IDE controller.
5. Place the CD-ReWriter in a 5.25-inch bay.
6. Use four provided screws (size: M3x0.5x6mm) to secure the drive into the half-height bay. The screws electronically ground the drive.

☞ **NOTE:** This CD-ReWriter must be horizontally installed and

operated.

7. Locate your computer's power supply and find an unused power cable connector. If you do not have an available power connector, you'll need to purchase an Y-power cable splitter that expands one power connector into two. You may purchase it from your local vendor.
8. Attach the audio cable if necessary. If you had another CD-ROM drive with audio cable attached, it is not necessary to attach audio cable for your CD-ReWriter.
9. Put your computer cover back on. Be careful of any sharp edges, which might be hidden inside your computer.
10. Plug in your computer power cord, and turn on the computer.

Device Driver Installation

Drivers for DOS/Windows 3.1x

The bundled driver disc makes CD-ReWriter perform CD-ROM function under DOS and Windows 3.1. This procedure is not required if you are using Windows 95/98/NT because these operating systems have device driver for CD-ROM. If you install this driver in Windows 95/98/NT, some unexpected errors may happen accordingly. The procedure for installation is as follows:

1. Turn on your computer and boot in DOS.
2. Insert the CD-RW Device Driver disk into a 3.5" floppy disk drive.
3. At the command prompt, type the drive letter of the drive you're using, followed by a colon (:), and then press Enter.
4. Type "*setup*" and then press Enter.
5. Follow the instructions on the screen.
6. Express Setup is recommended for common users and Custom Setup for experienced users in specifying detailed settings.
7. Reboot your system to complete the installation.

 **NOTE:** Please read the *README* file in the device driver disk to learn more about using this drive

Drivers for Windows 95/98

Actually it is no need to install any driver if you're using Windows 95/98. Windows has its own default driver performing CD-ROM functionality. If the CD-ReWriter does not show up in My Computer or Explorer, please refer to Frequently Asked Questions (FAQ) for further solutions.

This driver in Windows 95/98 only supports reading functionality under Windows 95/98. To achieve writing, please install CD writing software such as Adaptec CD Creator.

CD writing software installation

Before you start...

Please understand that CD recording is a non-interruptible process. Therefore, a stable recording environment is a must. If you have a HDD set up only for CD recording purpose which is the best condition. By this I mean that in this HDD, only Windows 95/98 (or NT4.0) and the mastering software are installed, nothing else. Then the recording process shall be smooth.

However if an extra HDD is not available, you might prefer carrying out the following steps to optimize your Windows 95/98 (or NT4.0) CD recording arrangement:

1. Close all resident programs that include Anti-Virus, Screen Saver, System Agent, Power Management, etc. Turn off Auto Insert Notification. Further, maximizing and minimizing windows are not recommended either. If not, any operation of these applications will intrude the CD recording process and damage your disk.
2. Defragment your HDD before any CD recording. This is particularly important when you write files to CD from HDD. Defragmentation of HDD reallocates all the files so that these relevant files are placed in the nearby clusters. This saves time and risks when Easy CD Creator is trying to search for the files you want to record on CD.
3. It is not advisable that you have too many devices internally connected to the system. Heavy load carried by the system power supply may result in unstable power delivery to each of the internal devices thus causes system unsteadiness.

Installing CD writing software

1. Load the software CD in CD-ROM or your CD-ReWriter.
2. Follow the instructions shown on screen and proceed installation.
3. Some program may require your system to be rebooted after installation. Follow the program's request to reboot your PC accordingly.

Operation Instructions

Load a CD disc

- ♦ Press the eject button on the CD-ReWriter front panel and the tray will eject automatically.
- ♦ Put the CD disc in the tray with the labeled side up.
- ♦ Press the eject button or slightly push on the front of the tray to close the tray.

When a CD disc is loaded, you should be able to read files properly on the disc within a program.

Removing a CD disc

- ♦ Press the eject button on the CD-ReWriter front panel.
- ♦ Remove CD disc from the tray.
- ♦ Press the eject button or slightly push on the front of the tray to close the tray.

Maintenance

Typically, the CD-ReWriter needs no maintenance or cleaning. Most problems will be prevented if you keep CD discs clean. Use lens-cleaning cloth to slightly wipe away dusts on disc surface and avoid scratching it.

Emergency Eject

If the tray does not eject automatically, you may manually pull out the tray. Follow these steps:

- ♦ Switch off the power.
- ♦ Insert a straightened paper clip into the emergency hole (please refer to the illustration in Front View). The tray will be partially ejected.
- ♦ Gently pull out the tray.

Frequently Asked Question (FAQ)

The following FAQ's are the most common problems you may find during installation or regular use. Please review these FAQ's to have your problem solved. In case you do not find any items that answer your problem, please contact your dealer or technical support.

Q: Computer won't boot up after installation.

Please proceed the following procedures to get your computer back to work:

- Turn off and unplug your computer first. Check each connector along both IDE cables. If there is any bent pins, straighten them. Correct connection is that all pins are fully covered and colored stripe of IDE cable lines up with PIN-1 of each connector.
- Check if the power cable attached correctly to each drive.
- If an IDE cable is connected with CD-ReWriter and other device, check the jumper settings of both devices and make sure the "MA" (master) and "SL" (slave) settings are different from each other.

Q: The CD-ReWriter doesn't show up in My Computer or Explorer.

The following steps will assist you to get your drive to work as a CD-ROM:

- If you cannot find CD-ReWriter in Explorer, restart your computer, or shut it down and then turn it on again.
- Is the CD-ReWriter receiving power properly? You can test it by pressing eject button to see if the tray opens and closes.
- Is the IDE cable connected properly? Be careful to turn off and unplug your computer system before checking this item. Check the connection by your opening computer system to see if the IDE connector well inserted and the colored stripe on the side of the IDE cable lines up with PIN-1 of each connector.
- There is another way to activate IDE ports in Windows 95/98: Click Start | Setting | Control Panel | Device Manager | IDE HDD controller | properties | Settings tab | Select "enable both IDE channels" to enable the IDE channels. Then reboot your PC.

Q: Not sure which drive letter was assigned to the CD-ReWriter.

The CD-ReWriter will have an icon, just like a CD-ROM drive. You can easily see which icon is CD-ReWriter by double-clicking "My Computer" icon, then right-click CD drive's icon, and selecting Eject. The tray of selected drive will open.

Q: The CD-ReWriter has problem in reading CD disc.

There are several ways to solve this problem as follows:

- The CD disc in the tray may be loaded upside-down, or a little off-center. Try re-loading the CD disc with its label side up.
- After loading a CD disc, it will take a moment to let the CD-ReWriter read the disc information. When the indicator on the front panel stops flashing and stays green, it is ready for access.
- If the disc you just loaded is a blank CD disc, try it later after copying some information to the CD.

Q: Error message when double-clicking on the CD-ReWriter icon.

- ♦ There is no CD in the CD-ReWriter, load a CD disc and try again.
- ♦ After loading a CD disc, you need to wait for a short moment to let the CD-ReWriter read the disc information and ready for further access. The CD-ReWriter is ready when the light stops flashing and stays green.
- ♦ The CD disc in the tray may be loaded upside-down, or a little off-center. Try re-loading the CD disc with its label side up.
- ♦ If the disc you just loaded is a blank CD disc, try it later after copying some information to the CD.

Q: What is a buffer underrun and why is it a problem with CD-R?

An uninterrupted data flow to the CD-Recorder drive is needed when using mastering software like Easy CD Creator. A buffer underrun occurs when the PC cannot consistently send the required data to the CD-Recorder. If a buffer underrun occurs during writing, your CD-R disc is unusable anymore.

Q: What are possible causes of buffer underrun**Hard Disk**

- ♦ Extremely fragmented hard drive.
- ♦ Not enough space in temporary directory.
- ♦ Hard disk compression may cause buffer underruns. We do not recommend writing from a compressed hard disk or disk partition.
- ♦ "Dumb" thermal re-calibration (only on very old hard drives).

Other Hardware

- ♦ Spin-down of CD-ROM drives you're copying data or audio from.
- ♦ Slow source devices.
- ♦ Source devices that transfer data in bursts.
- ♦ Incorrect recorder controller settings.
- ♦ Inability of the devices to sync properly.
- ♦ Overall system configuration.
- ♦ Computer is unable to allow data transfer fast enough.
- ♦ Conflicts with old device drivers. Do not use 16-bit (real-mode) device drivers in Windows 95 or 98. REM out any old CD-ROM drives you may have in your CONFIG.SYS file. (You don't need them anyway.)
- ♦ Setting hard drive's read ahead optimization to "none" may cure buffer underruns in some cases. (Go to the Start menu | Settings | Control Panel | System | Performance | Advanced Settings/File System | Hard Disk and set "Read-ahead optimization" to "None.")

Networks

Recording across the network (a network may be too slow to maintain adequate throughput speed).

Files to Be Recorded

- ♦ Recording many small files.
- ♦ Damaged source files (data loss).
- ♦ Trying to record files in use by the system or other applications.

Other

- ♦ Copying from a CD that is scratched, dirty, or damaged.
- ♦ Recorder malfunction

Q: What can I do to prevent Buffer underrun?

You can try the following procedures to prevent buffer underrun:

- ♦ Use a faster hard drive and defragment your hard drive at least once a week.

- Do not record across a network. Copy the desired files to your local hard drive.
- If your source hard disk is more than five years old, make sure it does smart thermal re-calibration.
- It may be necessary to write audio at slower speeds than those you can achieve for data, since writing CD-DA audio requires streaming more bits per second to the recorder.
- Record in lower speed – it takes longer time to empty the buffer when recording at lower speed.
- Keep the CDs, the recorder, and your source CD-ROM drive free of dust.
- Close all other application programs.
- Disable the screen saver and anti-virus programs.
- PC power management makes PC slower and thus it may result in buffer underrun. Disable the power management or delay the power saving time.
- Keep your CD-R/CD-RW cool. Sometimes the drive fails when they overheat.
- Your system must fulfill the minimum configuration of your CD-recording Mastering software.
- For the users of Easy CD-Creator: select "tools", "options", "advanced". You can adjust the on the fly recording.
- Do not try to copy empty directories, zero byte files, or files that may be in use by the system at the time of recording.
- If your data includes more than 10,000 very small files, create a disc image first, or record at a slower speed.
- The temporary directory should always have space free at least twice the size of the largest file you are recording.
- The entire computer, from the motherboard bus to the recorder itself, needs to be configured properly for faster recording and highest maximum sync transfer rate.
- Try a different brand of recordable disc.

Q: Cannot directly copy from one CD to another.

- Some CD-ROM disc will not allow direct copying to the CD-ReWriter or are not capable of digital audio extraction.
- You need to have a supported CD-ROM drive to use as your source.
- Some CD discs may have copy protections or other features that do not allow a CD-to-CD copy.

Q: Poor audio quality.

- Make sure the audio cable is connected completely between the sound card and CD-ReWriter or CD-ROM.
- Make sure that you do not have any sound-muting feature turned on by way of the monitor or software.
- Check the sound from the CD-ReWriter by plugging earphones or speakers to the earphone jack on the front panel. If the audio quality is good, then the problem is probably with the sound card, speakers or the audio cable. Please refer to the documentation of the sound card and speaker for further assistance.
- Try listening to the wave files (.WAV) on your hard drive to see if they sounded poor before you copy them to CD.

Q: Poor video quality.

This can be caused by the same situations that cause buffer underrun. This can also happen if video card is slow. Try the following steps to solve the problem.

- Try the solutions for buffer underrun. (page 11)
- Upgrade your video card.
- Reduce the size of video window and close other running applications.

Q: Unable to see a second session reading from a CD-ROM drive.

- Eject the CD and re-load it.
- Refresh the screen. Select the My Computer icon in Windows Explorer and press F5.
- Make sure if your CD-ROM drive reads CD-RW discs. CD-RW discs can only be used in CD-ReWriter or newer MultiRead CD-ROM.
- For Windows 3.x users: Windows 3.x cannot read multi-session CD disc that is created by Direct CD. If some other programs create the CD disc, please verify you are using version 2.23 of the MSCDEX.EXE file. First, restart your PC and when you see "Starting MS-DOS...", appear on your monitor, press F8. Each line in your CONFIG.SYS and AUTOEXEC.BAT files will load one at a time. Press "Y" until you see a line containing "MSCDEX.EXE", then press "Y" and you will see the version number displayed on monitor. The number shall be 2.23 or greater. In case you cannot find this file, you can download it from Microsoft's FTP site: <ftp://ftp.microsoft.com/Softlib/MSFILES/MSCD223.EXE>
This file is a self-extracted ZIP file, please run it to retrieve MSCDEX.EXE file.
- See if the CD-ReWriter or other CD-ROM drives can read the CD disc properly. If so, then the problem is probably with the CD-ROM drive. Contact the manufacturer of the drive for updated drivers or patch files.

Q: Unable to see the CD label or all files on the CD within Windows Explorer.

Refresh the screen. Select My Computer icon in Windows Explorer and press F5.

Q: Applications cannot locate the CD in CD-ReWriter.

Some programs only locate the first logical drive letter assigned to a CD-ROM or a CD-ReWriter drive. For example, if your CD-ROM drive is assigned drive D: and CD-ReWriter is assigned drive E:, the program locates drive D: only and will not locate drive E:. Thus you need to reassign drive letters to both your CD-ROM and CD-ReWriter drives in case you need to run the program in CD-ReWriter.

- Windows 95/98: right-click My Computer icon. Click Properties item, open Device Manager and double-click CD-ROM drive, then click Setting tab. Under Reserved drive letters, select the drive letter after the existing letter (for both start and end drive letter) and click OK. Then double-click CD-ReWriter icon, then click Setting tab. Under Reserved drive letters, select the drive letter before current one and click OK.
- Windows NT: click on Start | Programs | Administrative Tools (common). Choose Disk Administrator. Right-click on the drive letter you would like to change. Select Assign Drive Letter and change the drive letter accordingly.

Q: Can I use hard drive compression software?

It is not recommended to use hard drive compression software when CD-ReWriter is installed. CD-R and CD-RW writing program may check free space to estimate needed space. However, due to the hard drive compression software's compression ratio may vary from time to time. The actual free space available may not be enough for disc copying.

Q: To maintain optimal writing performance

Regularly run disc de-fragmentation and scanning programs on your hard drive (please refer to your Windows manual for detailed information). Doing this improves the access time to the hard drive, and thus ensures writing in higher performance.

Finally, a word to all CD-ReWriter owner. The above are only GENERAL rules which does not necessarily apply to any combination of CD-ROM drives, HDD and motherboards. A few trials on different configurations before recording are recommended. Also, try out different CD-R media before you proceed to make volumes duplication as you may figure out which brand of CD-R media originates smoother recording and easier access. As long as you find the best CD recording way, stick to it . Have a nice recording time.

